



# CLO Global Default Study

#PositiveImpact

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# Introduction



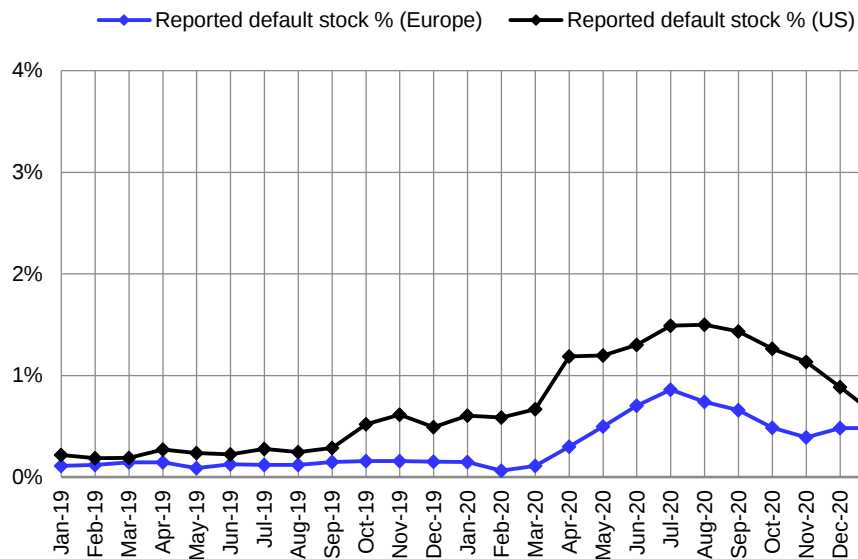
What has the leveraged loan default rate been in CLOs? How should one measure it and what is the basis for measurement? Is the default rate for leveraged loans held by CLO better or worse than the broader market? Which sectors have defaults occurred in and what manager platforms have outperformed and underperformed in the default stakes? Find out the answer to these questions and more in our Global CLO leveraged loan default study.

# Default experience in loans using reported numbers



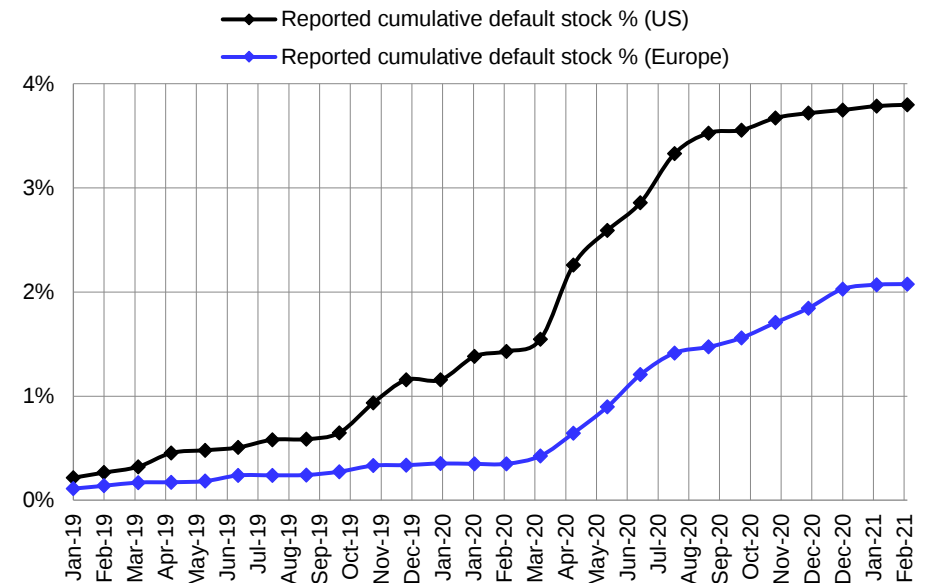
- Historically default analysis in CLOs has tended to focus on manager confirmed default experience and reported stock of defaults and movement of same.
- A comparison of manager confirmed defaults is challenging due to the ability to source standardised default data from all managers directly to allow a like for like comparison. The market therefore has focused on reported defaulted numbers in trustee reports.
- We find the current Reported default stock (by amount) for both Europe and the US is low, standing at c.0.5%. While even with the credit deterioration observed over the past 12 months, this metric never went higher than 1.5% and 1% respectively.

## Reported default stock evolution in CLOs



Source: Deutsche Bank, IntexCalc, Cumulative default stock for any month is the ratio of total reported defaulted amounts from Jan 2019, to the average of month end CLO AUMs in the study from Jan 2019 to that month end date

## Reported default stock cumulative in CLOs

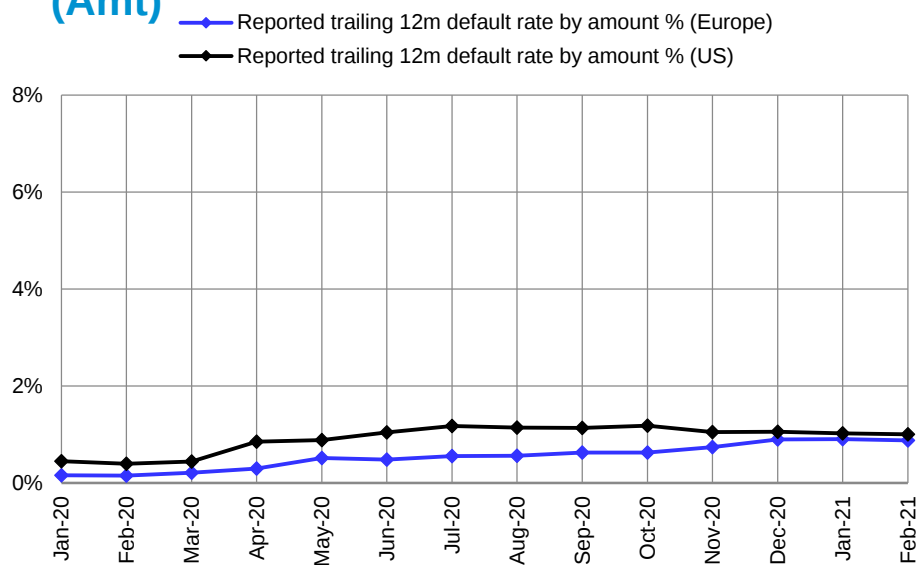


# Reported trailing 12m default rates



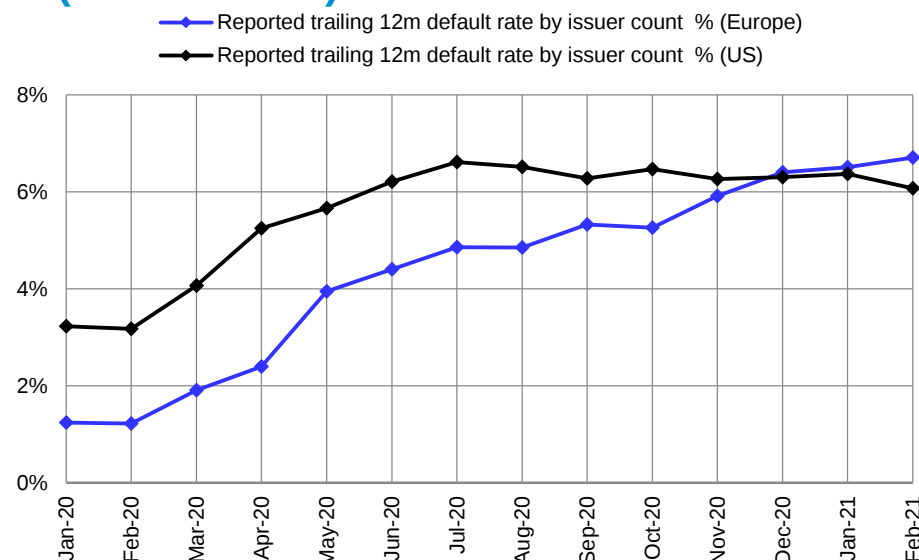
- In this report using Intex loan level and trustee data we construct a trailing 12 month default series for the sector using new defaults each month and counting default amount as of the first month of default. This is based on loans classified in trustee reports.
- Again like the Reported default stock, this number (by amount) number is low for both Europe and the US, each standing at c.1% currently. This rate has been at or below this level for the past 12 months.
- Reported default rates are comparable economically to CDRs that investors run as they have similar effects of haircutting the defaulted portion of the pool towards coverage test calculations.
- Reported trailing 12m default rates by issuer count however are significantly higher currently standing at 5.9% and 6.7% respectively, the higher number confirming that smaller issuers have contributed disproportionately to the default metric.

## Reported trailing 12m default rate in CLOs (Amt)



Source: Deutsche Bank, IntexCalc, Trailing 12m default rate is the ratio of total new reported defaults across 12 months, to the 12m ago month end CLO AUM in the study

## Reported trailing 12m default rate in CLOs (issuer count)



# However, reported numbers are not the full story



The reason why reported figures does not reflect CLO exposure to credit risky collateral is that leveraged loan defaults are not always recorded as such in CLO

**a) Managed Vehicles:** CLOs are managed vehicles and can sell out of defaulted or restructured credits just before a restructuring is effected,

**b) Manager classification:** Managers can classify loans into restructured asset buckets/current pay buckets which would exclude them from the default bucket, and

**c) Rating agency:** Where a rating agency rates an asset at 'D' rating (or Ca/CC/C which would also count towards default), if the same agency does not rate the deal which holds the given asset, then that deal may not report the said asset under the default bucket.

*-> Therefore we make adjustments for these so that if a loan/bond is classified as defaulted in any deal in a given month, we classify that instrument as defaulted in other deals even where it was not reported as such.*

# Introducing the DB Research Adjusted Lev Fin default rate



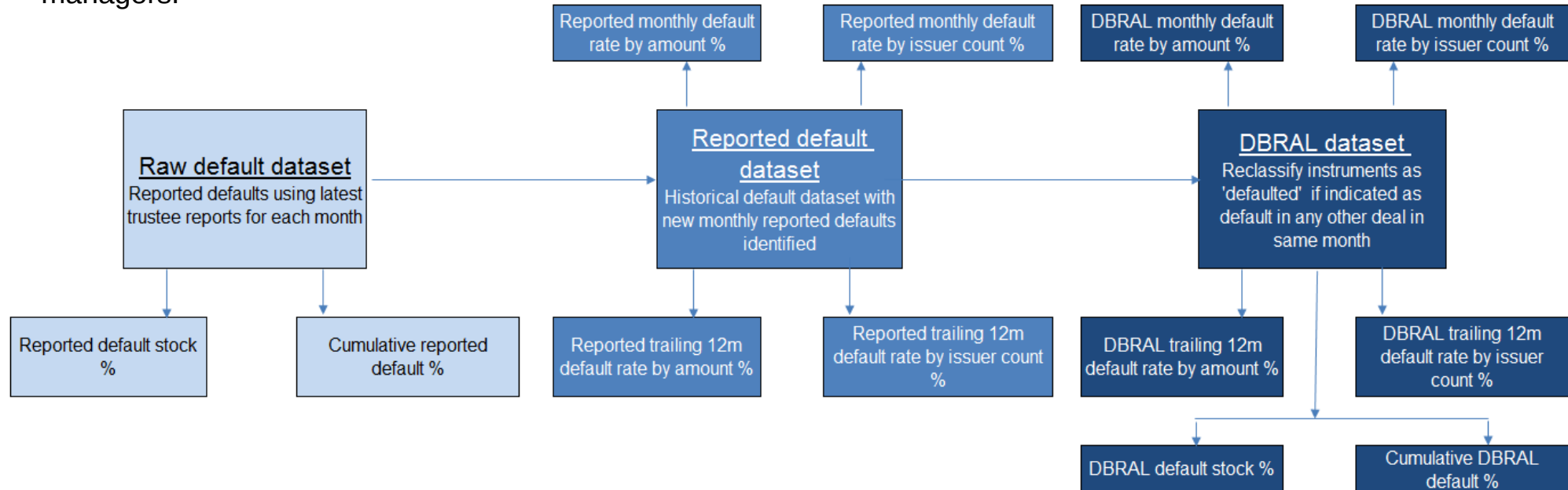
Therefore to ascertain a better level of credit risk we construct a **DB Research Adjusted Leverage Finance (DBRAL) default rate**. Using latest trustee reports for each month, we compute Reported default stock, Reported monthly default rate and Reported trailing 12m default rates at the universe and manager level.

We then compute new defaults, from which we compute default rates.

Lastly, we reclassify instruments and count the following instruments as defaulted (DBRAL dataset):

- Defaults reported as such in trustee reports.
- Defaulted loans which were flagged as defaulted in any other latest trustee report of that month even if not reported as defaulted in the specific deal under consideration.

Using this DBRAL default dataset, we similarly compute DBRAL default stock, and default rates for universe and managers.



# A practical example: Garrett Motion



- Garrett Motion first appeared as defaulted in EUR CLOs in September 2020, with three instruments featuring: LX175752, XS1884811594, LX176117.
- The issuer has been carried as defaulted in each of the subsequent months leading up to February 2021, but September 2020 is determined as the first month of default.
- These three instruments were together reported as defaulted across 12 deals and 6 managers in September 2020, and the Reported default balance was EUR 25 mn in September 2020.
- For DBRAL default purposes, we reclassify the 3 instruments as defaulted in 72 other deals and 21 managers even though they were not classified as defaulted. This reclassification occurs every month for as long as an instrument is indicated as defaulted in any CLO. In September 2020, the DBRAL default balance across the three instruments is EUR 178 mn.
- For Reported and DBRAL trailing 12m default rate, we take only the September figures, since, in subsequent months, it is not a 'new' default anymore.
- For Reported and DBRAL default stock figures however, we calculate the respective figures for each month and not just September 2020.

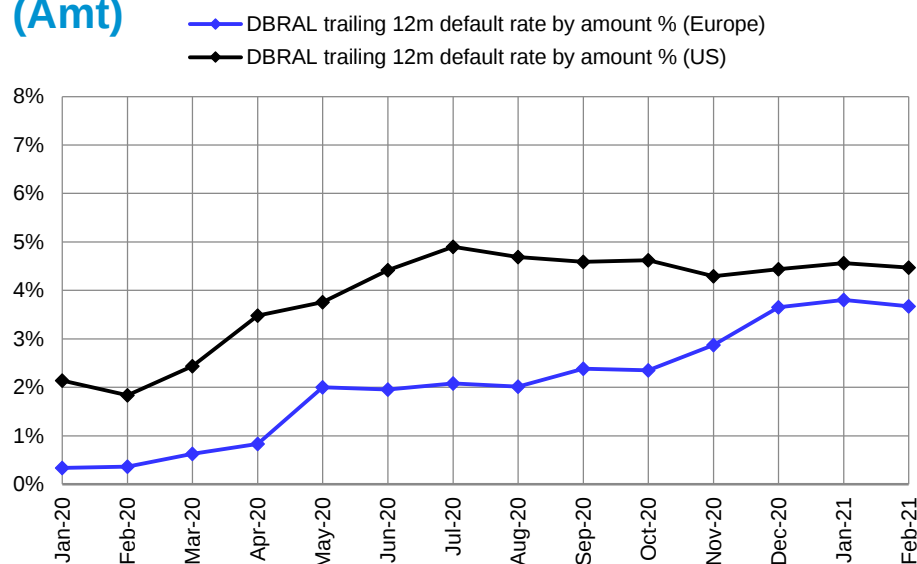


# Introducing the DB Research Adjusted Lev Fin default rate

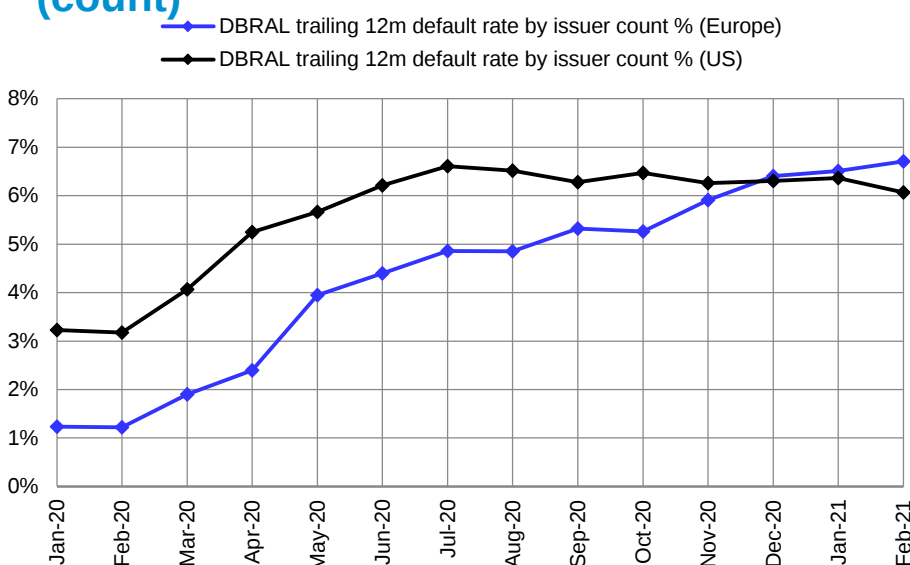


- Using this data we construct a trailing 12 month default series for the sector. **DB Research Adjusted Leveraged Finance (DBRAL) 12 month default rate.**
- By amount the DBRAL default rate currently stands at 4.5% in the US and 3.7% in Europe currently. The US has trended in and around that level peaking at 5% in July 2020, while Europe increased recently with a recent peak of 3.9% in January 2021.
- By issuer count the DBRAL default rate stands at ~6% for both regions, with the US plateauing recently while Europe has increased. This higher figure versus default rate by amount indicates that smaller issuers have contributed more towards default, and this contribution is greater in Europe than in the US.
- The DBRAL default stock and default rate figures are meant to provide a more comprehensive picture of credit risk but have no direct impact on OC test or other cashflow drivers in deals.

## DBRAL trailing 12m default rate in CLOs (Amt)



## DBRAL trailing 12m default rate in CLOs (count)



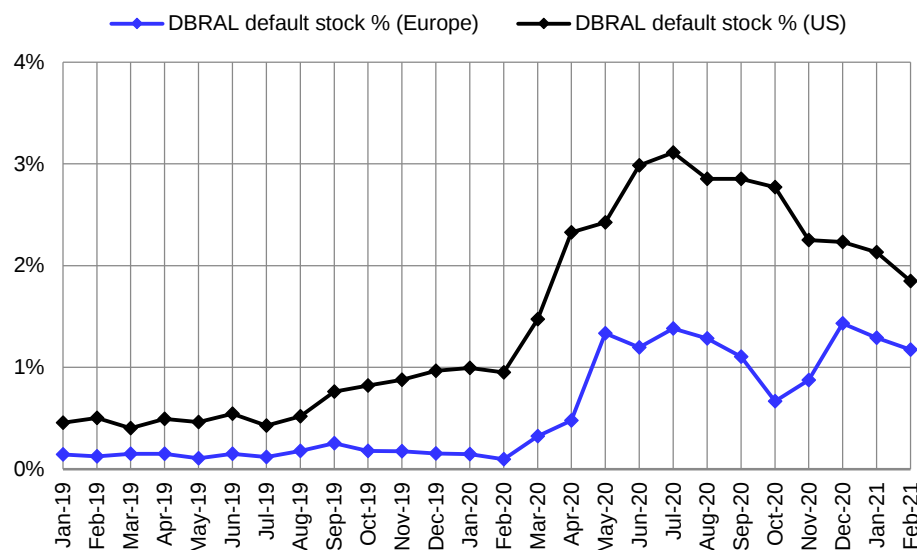
Source: Deutsche Bank, IntexCalc, Trailing 12m default rate is the ratio of total new DBRAL defaults across 12 months, to the 12m ago month end CLO AUM in the study

# Default stock: DBRAL also higher than Reported

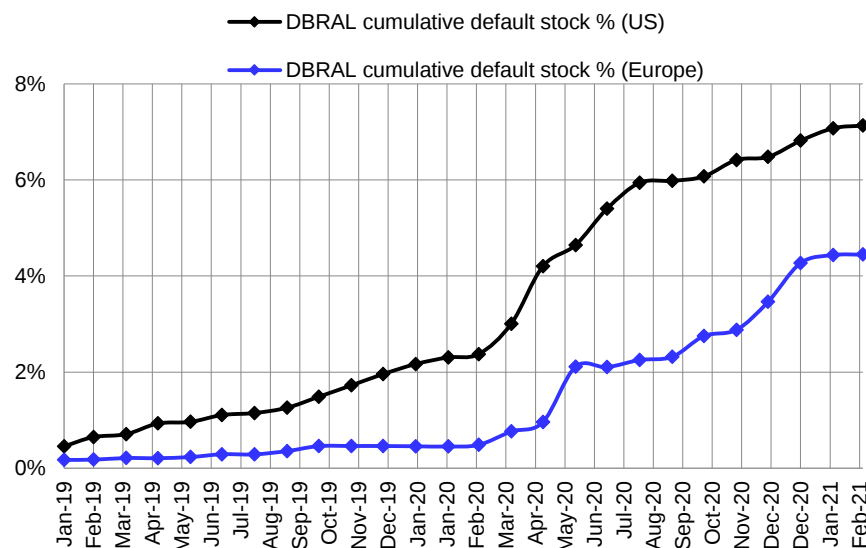


- Similarly, **DBRAL default stock is higher than Reported default stock**. On a current basis it stands at 1.8% and 1.2% in the US and Europe respectively, nearly three times the Reported default stock.
- On a cumulative basis, DBRAL defaults across 7% and 4.4% of the universe has occurred since 2019, with much of that increase following March 2020 last year due to the pandemic.

## DBRAL default stock evolution in CLOs



## DBRAL default stock cumulative in CLOs



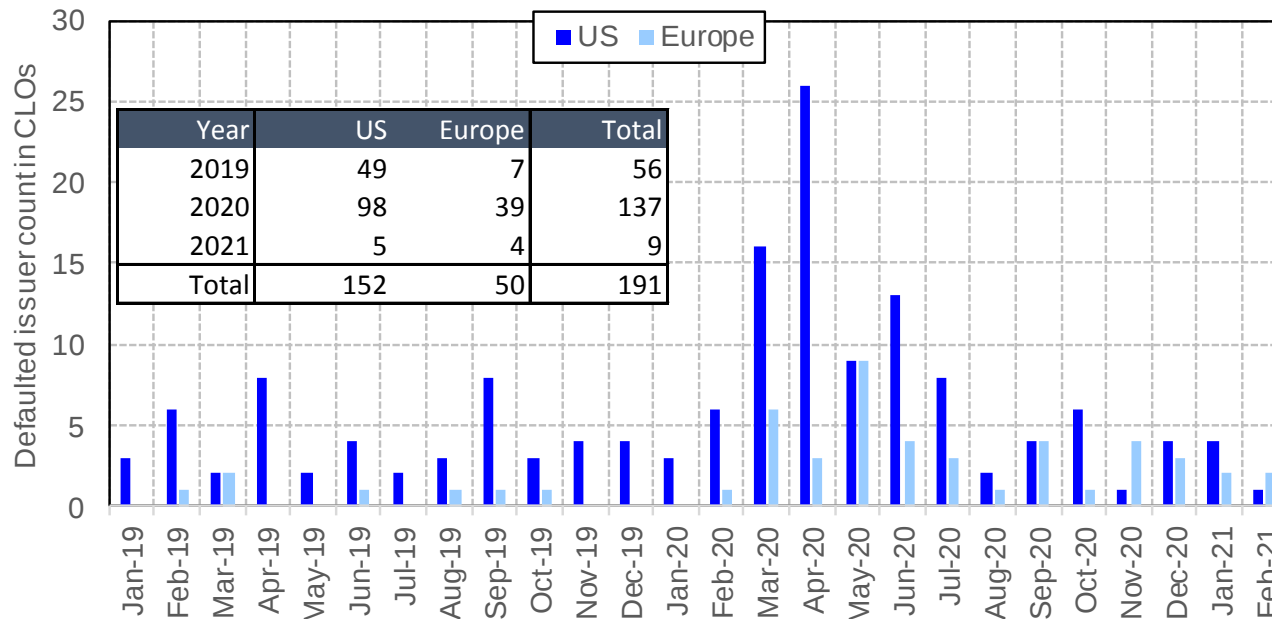
Source: Deutsche Bank, IntexCalc, Cumulative default stock for any month is the ratio of total DBRAL defaulted amounts since Jan 2019, to the average of month end CLO AUMs in the study from Jan 2019 to that month end date



# Default experience – a closer look

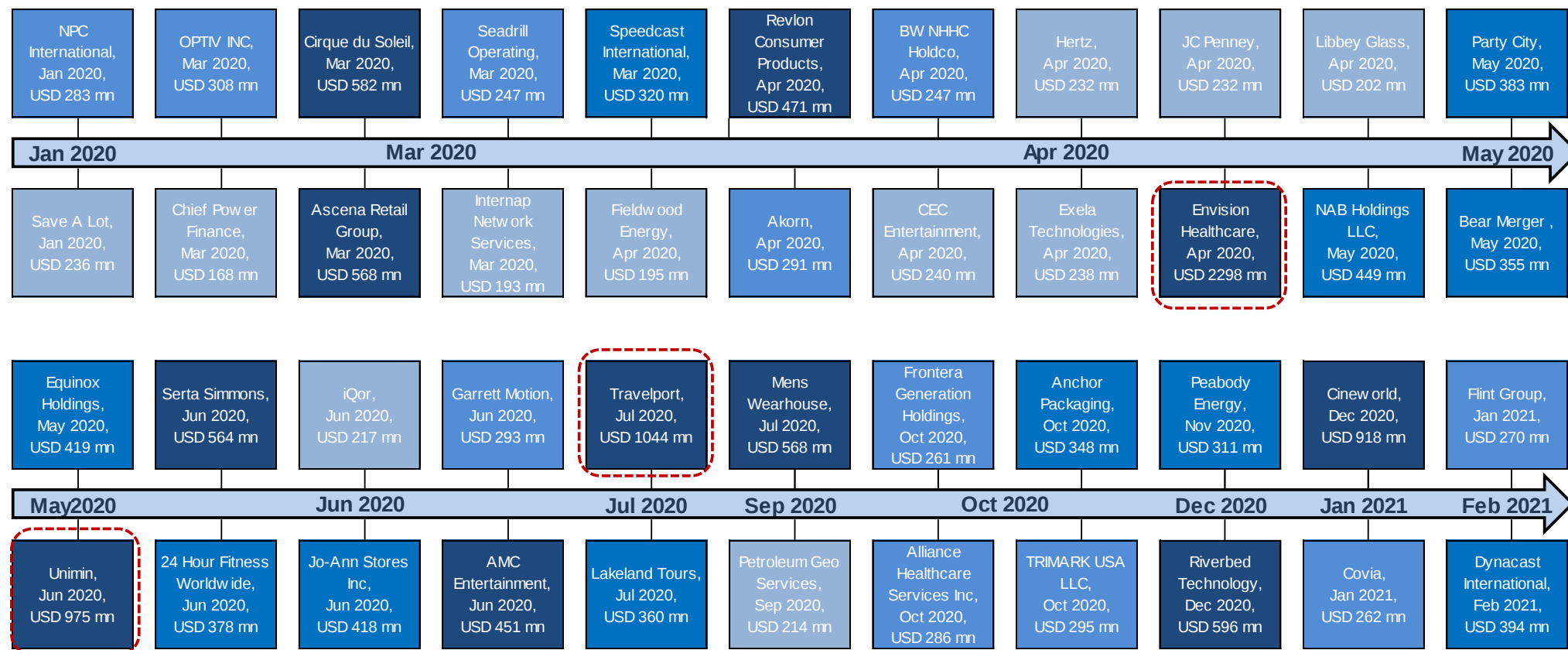
- In all 103 obligors have defaulted in US CLOs since the beginning of 2020 and 43 in European CLOs, with 5 and 4 issuers in each geography defaulting so far this year.
- The top three defaults in US CLOs were Envision Healthcare (\$2.3 bn defaulted exposure), Travelport (\$1 bn defaulted exposure) and Unimin (\$0.9 bn defaulted exposure). In Europe Flint Group (EUR 537 mn defaulted exposure), GTT Communications (EUR 445 mn defaulted exposure) and Technicolor (EUR 312 mn defaulted exposure) were the largest.
- Pandemic induced economic lockdowns led to a material deterioration in credit, as defaults in 2019 in US and Europe lower at 49 and 7 issuers.

Defaulted issuer count by year



Source: Deutsche Bank, IntexCalc, Year refers to year where at least one of issuer's instrument appeared as default in a CLO, with trustee report date counted towards the month of default. Defaulted exposure referred to in the bullets above is at the time of first default. 11 issuers are common between US and Europe

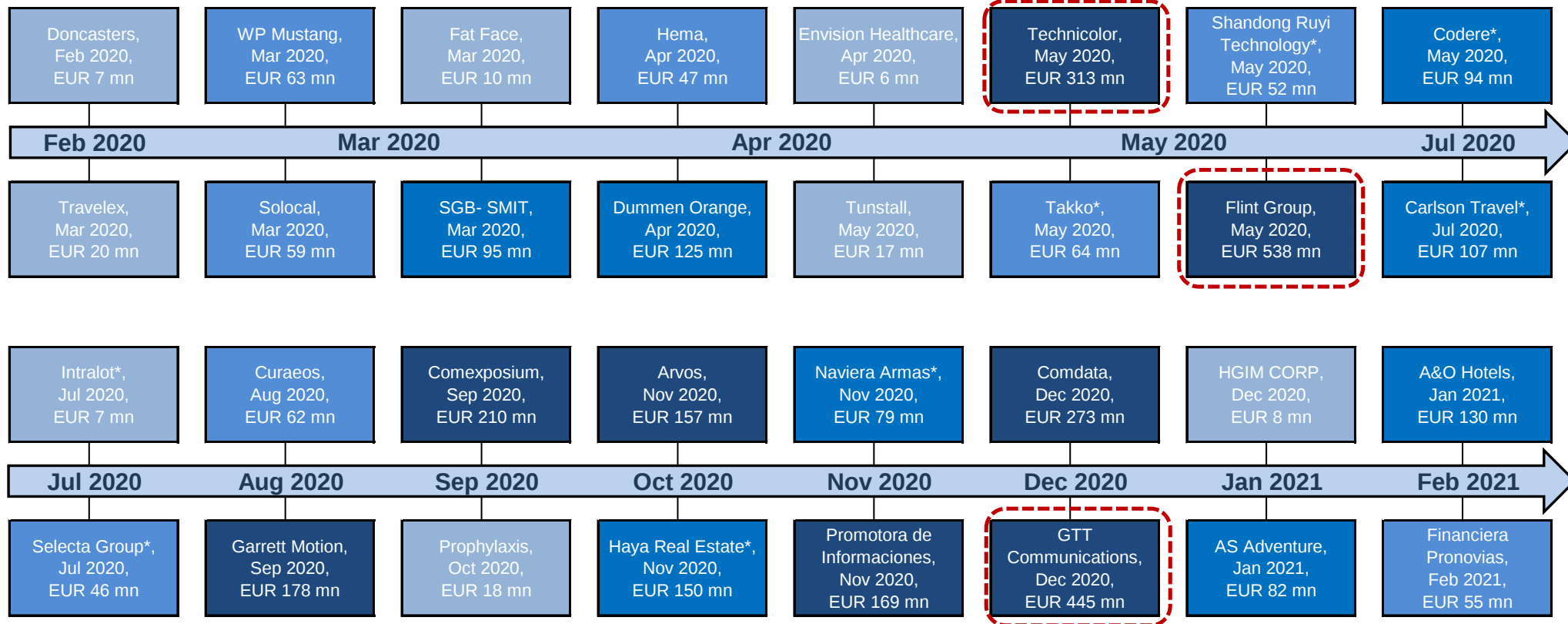
# Selected defaults in US



- Since 2020, there have been 104 unique issuer defaults in US. The timeline diagram above shows obligors with a defaulted exposure amount greater than \$150 mn across CLOs at the time of first default. 44 obligors are shown and a full list is [available here](#).

Source: Deutsche Bank, IntexCalc

# Selected defaults in Europe



- Since 2020, there have been 43 unique issuer defaults in Europe. The timeline diagram above shows obligors with a defaulted exposure amount greater than EUR 5 mn across CLOs at the time of first default. 32 obligors are shown and a full list is [available here](#).
- We have asterisks (\*) next to 8 issuer names here where only bonds featured in the defaults

Source: Deutsche Bank, IntexCalc

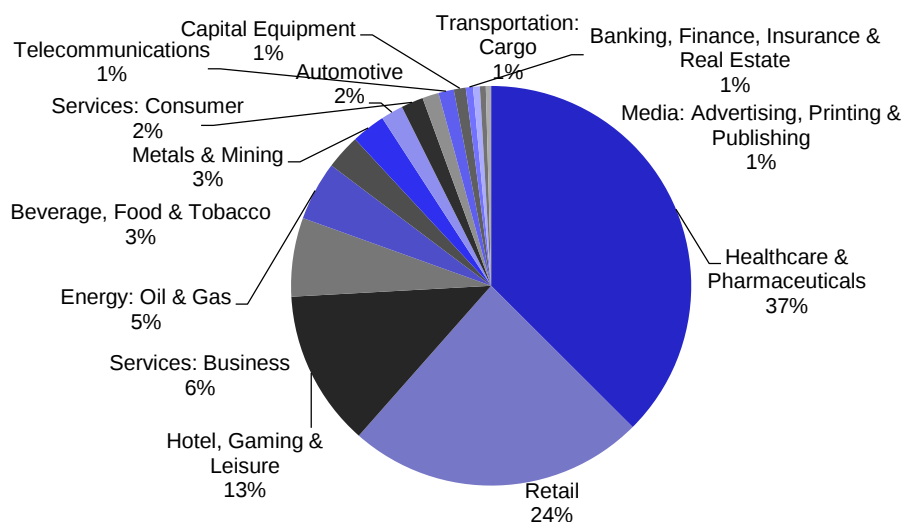


# What sectors have defaults occurred in?

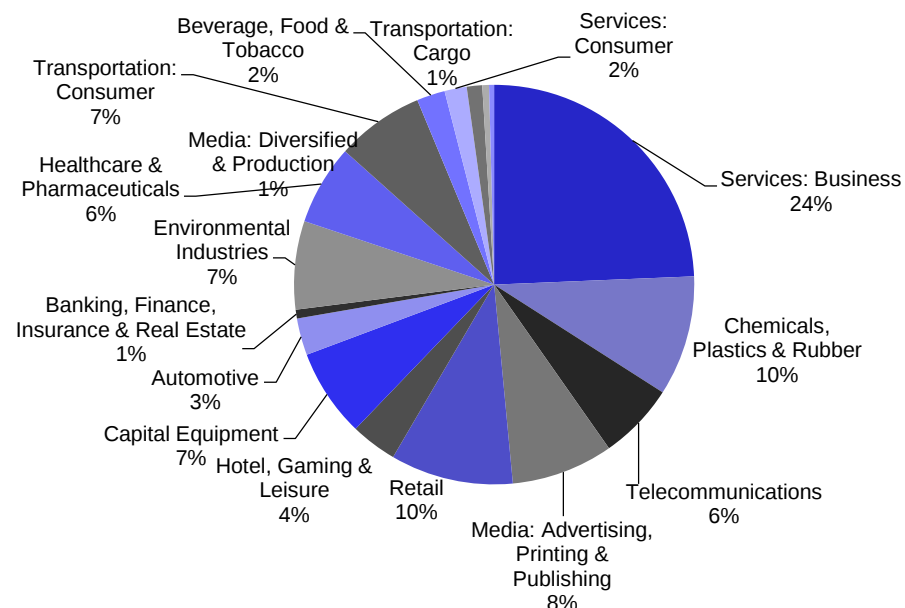


- An analysis of the breakdown of total default volumes since 2020, shows there is a vast difference in which sectors have experienced defaults depending on CLO geography.
- In the US, Healthcare & Pharma constituted 37% of all defaults, while Retail followed with 24% of default volumes and hotel, gaming & leisure in third place at 13%. In Europe, the Services: Business sector led with 24% of total defaulted exposure, followed by Chemicals, Plastics & Rubber contributing 10%, and Retail in third position at 10%.
- Defaults in the US have also been a lot more concentrated around a small number of sectors. Since 2020, the top 3 sectors constituted 75% of total defaulted exposure in the US versus 44% for the top 3 sectors in Europe.

US sector defaults as % of defaults since 2020



European sector defaults as % of defaults since 2020



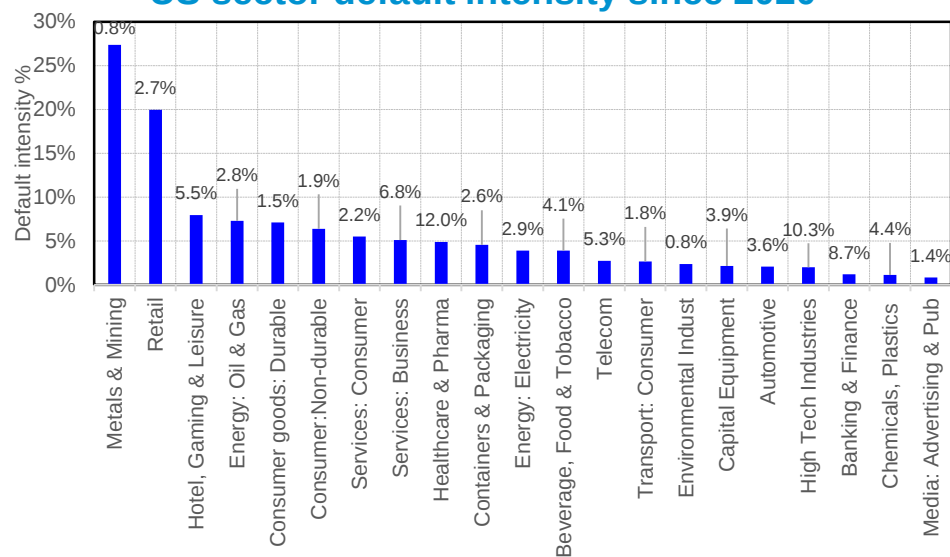
Source: Deutsche Bank, IntexCalc, Moody's. Data in pie charts and bullets refer to the DBRAL default volumes.

# Which sectors were the worst affected?

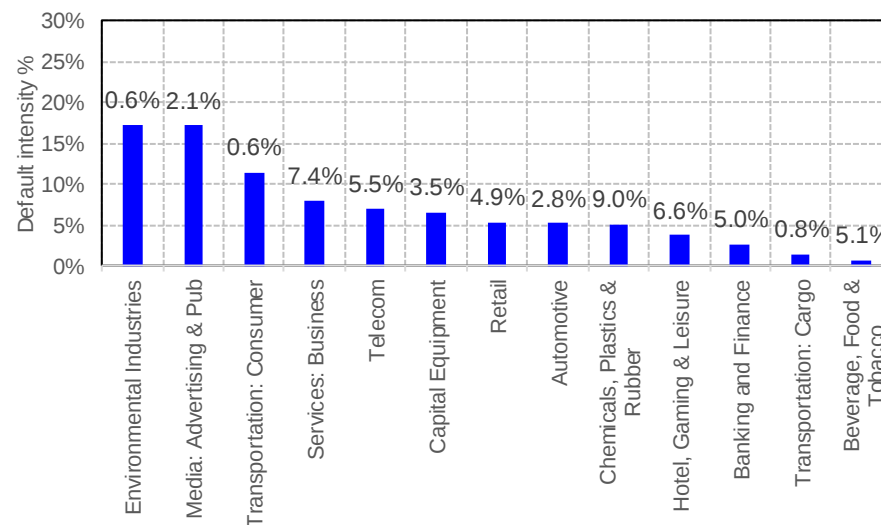


- However a straight analysis of which industries have the highest share of defaults does not tell the full story, we therefore also identify what portion of a given industry defaulted. Again results vary by CLO geography.
- In the US, we find that the riskiest sectors last year were Metals & Mining and Retail where 27% and 20% of sector volume were counted towards default.
- Prominent names in Metals & Mining included Unimin and Peabody Energy, while in Retail Mens Warehouse and the Ascena Retail Group featured heavily. Nevertheless these were relatively small sectors in CLOs, constituting just 0.8% and 2.7% of the overall universe, as indicated in the labels.
- In Europe, Environmental Industries **and** Media: Advertising, Printing & Publishing were hard hit with 17% of the average sector balance in each in default on a DBRAL default basis. Here again, the sectors are small constituting 0.6% and 2% respectively of the overall universe.
- Dumm Orange is the prominent default classified under Environmental Industries while Promotora de Informaciones is dominant in the media subsector under defaulted issuers.

US sector default intensity since 2020



European sector default intensity since 2020



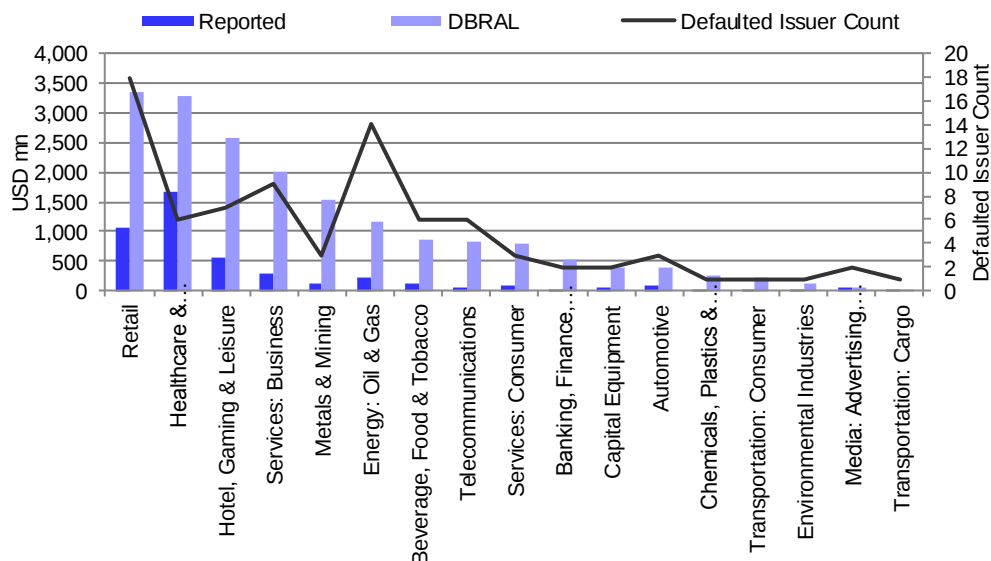
Source: Deutsche Bank, IntexCalc, DBRAL default volumes of issuers in the first month of default are considered and not reported figures alone, The denominator is the average AUM balance in each sector over the last 1 year

# Analysing sector defaults: volumes and count

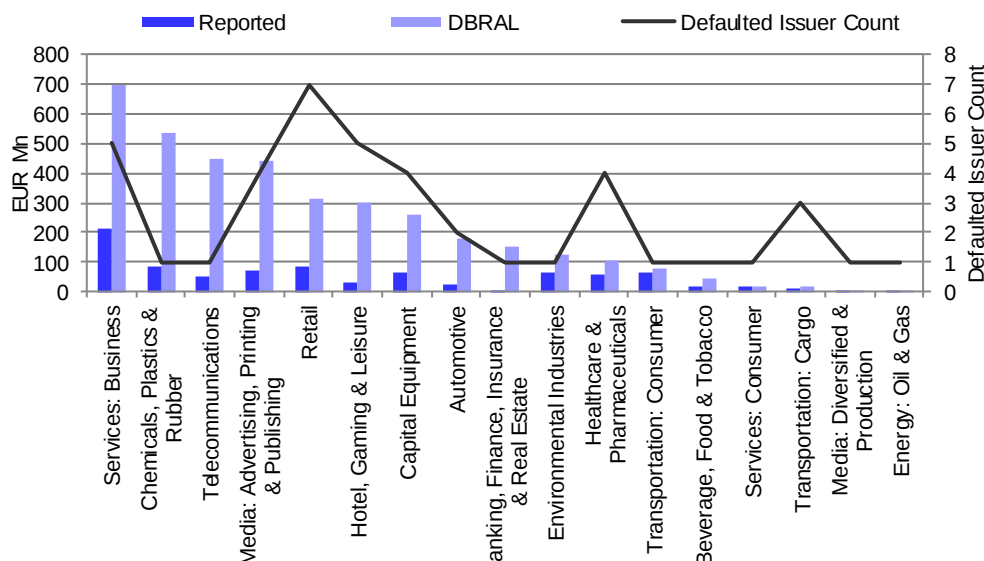


- In terms of the actual volume of defaults, in the US, Healthcare & Pharma reported about USD 1.6 bn of defaults (6 issuers), followed by Retail with about USD 1 bn across 18 issuers.
- However, with DBRAL figures, Retail led the way with USD 3.3 bn followed by Healthcare & Pharma with USD 3.2 bn.
- In Europe, Services: Business and Chemicals, Plastics & Rubber had the highest amount of defaults in terms of both reported and DBRAL figures, the latter being EUR 0.7bn and EUR 0.5 bn respectively.
- In terms of issuer count, Retail led with 7 issuers defaulting, followed by Hotel, Gaming and Leisure with 5 issuers defaulting.

## US defaults by sector since Jan 2020



## European defaults by sector since Jan 2020



Source: Deutsche Bank, IntexCalc, Moody's. In this and following sector slides we count volumes at an issuer level with volumes being counted only as of the first month where any instrument of the issuer is reported as defaulted. Sector classifications for issuers have been cleaned on a best efforts basis by DB research

# Loan Defaults: CLOs versus the broader market

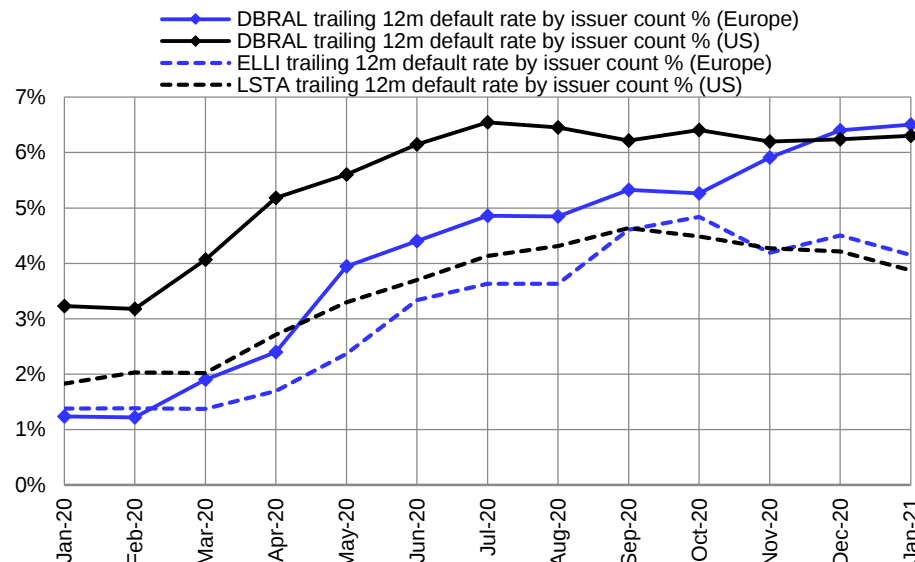
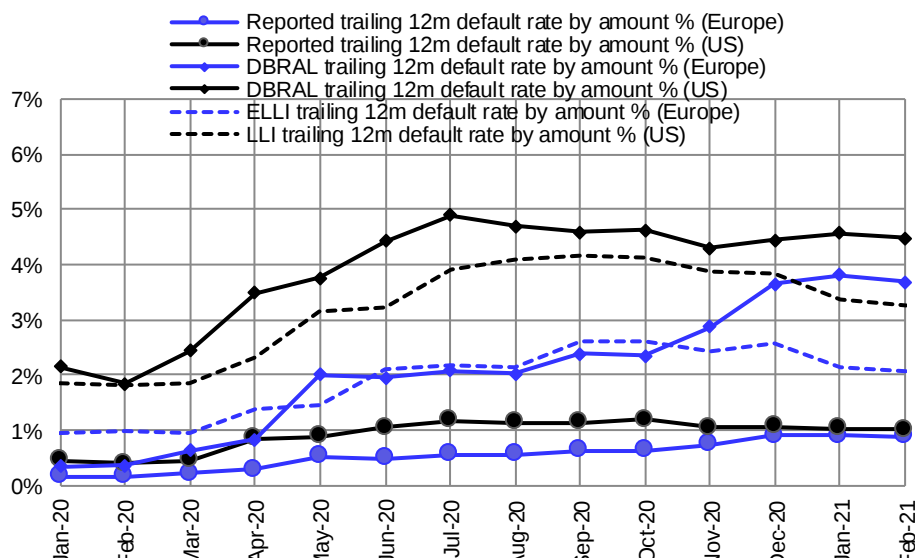


Is the default rate for leveraged loans held by CLOs better or worse than the broader market?

- That depends on how one measures. *Reported trailing 12m default rates* in CLOs, i.e. those derived by defaults defined in CLO documentation, are lower than the broader market as measured by S&P ELLI/LLI trailing 12 month default rates. However, *DBRAL trailing 12m default rates* in CLOs are optically higher than the broader market.
- The general trajectory of defaults in CLOs and ELLI/LLI default rates are in agreement however a comparison between the market index and CLO underlying universe is imperfect as:
  - CLOs, particularly in Europe, can carry high yield bonds,
  - CLOs have stricter definitions of 'default' such as CC/Ca ratings,
  - CLO default figures count even small issuers and issuers not rated by S&P and issuers which may not be in the ELLI/LLI,
  - In addition private restructuring of issuers not known to S&P may not feature in the index default list but may be captured in CLO reporting.

DBRAL trailing default rate vs LLI default rate by amount

DBRAL trailing default rate vs LLI default rate by count



Source: Deutsche Bank, IntexCalc. Both reported and DBRAL default rates by issuer count are the same as defaulted issuer count does not increase when we reclassify defaults in any month, like they do for nominal amounts.

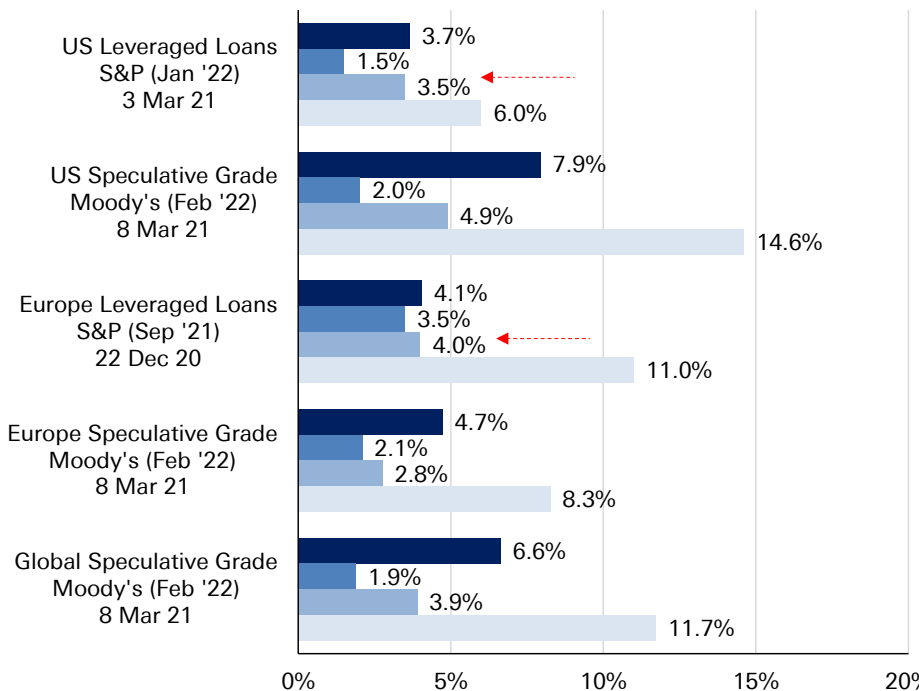
# Default forecasts: Rating Agency and Deutsche Bank



- Leveraged Finance default rate forecasts have been revised downwards since the peak of the pandemic. We summarise current default forecasts for both rating agency and Deutsche Bank Research across leveraged loan and high yield bond sectors.
- For example S&P, in its base case, expects the Leveraged Loan Index default rate to reach 3.5% by January 2022.

## Default Forecasts – Rating Agencies

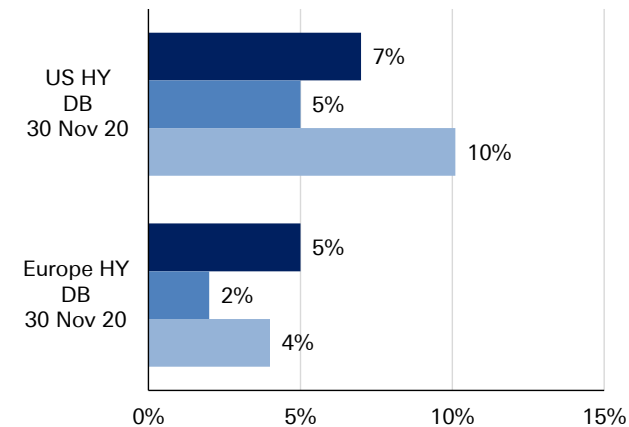
■ Current ■ Optimistic Scenario ■ Base Scenario ■ Pessimistic Scenario



Source: Deutsche Bank, Rating agencies. Forecasts based on issuer count.

## Default Forecasts – Deutsche Bank

■ Current ■ Year End 2021 ■ Q1 2021



DB forecast for both HY Bonds and Leveraged loans are same.

## Summary of current defaults

| Metric                                        | Reported defaults in CLOs |        | DBRAL defaults in CLOs |        | ELLI/LSTA default rates |        |
|-----------------------------------------------|---------------------------|--------|------------------------|--------|-------------------------|--------|
|                                               | US                        | Europe | US                     | Europe | US                      | Europe |
| Trailing 12m default rate by amount (%)       | 1.0%                      | 0.9%   | 4.5%                   | 3.7%   | 3.2%                    | 2.1%   |
| Trailing 12m default rate by issuer count (%) | 6.1%                      | 6.7%   | 6.1%                   | 6.7%   | 3.7%                    | 4.0%   |
| Stock of defaults (%)                         | 0.5%                      | 0.5%   | 1.9%                   | 1.2%   | NA                      | NA     |

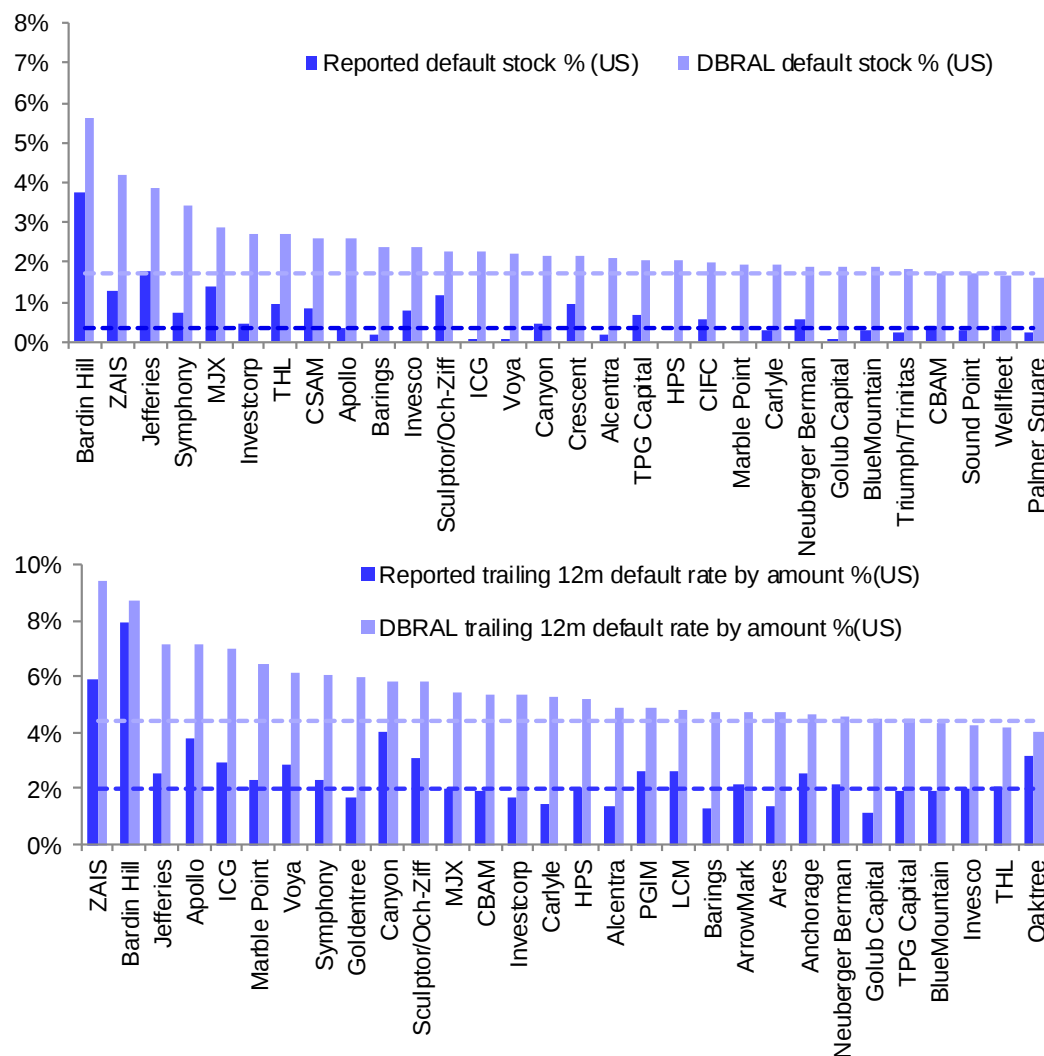
# Manager Defaults – who has outperformed and underperformed?



- We repeat this default analysis across the manager and deal universe. We compute default stock and default rates for individual managers, using reported defaults from trustee reports, and then looking at the impact of the reclassification under the DBRAL default approach.
- While the difference between reported and DBRAL default rates can be high for managers, it does not mean under-reporting of defaults, as default reporting is expected to be in line with the definitions under CLO documentation. ***Rather our adjustments reflect a more conservative approach to looking at manager 'defaults' but is better read as exposure to riskier – if not 'defaulted' in the general sense – collateral.***
- The default performance across manager platforms varies widely. While the median manager Reported default stock in US and Europe are currently at 0.4% and 0%, the median manager DBRAL default stock is at 1.7% and 0.8% respectively.
- Similarly, the median manager Reported trailing 12m default rates are at 2.0% and 1.0% in US and Europe, while DBRAL trailing 12m default rates as at end Feb 2021 are 4.4% and 3.1% respectively.
- The full list of manager stock of defaults and trailing 12 month default rate is [available here](#).



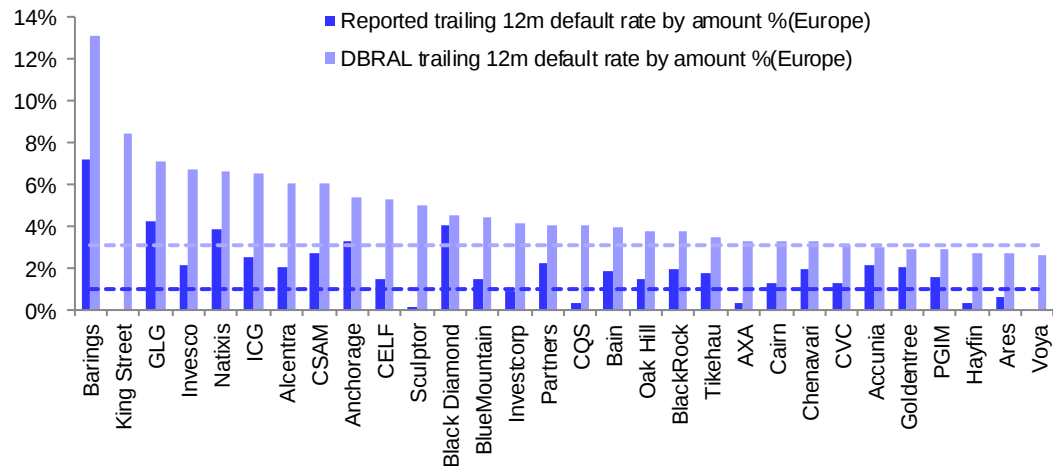
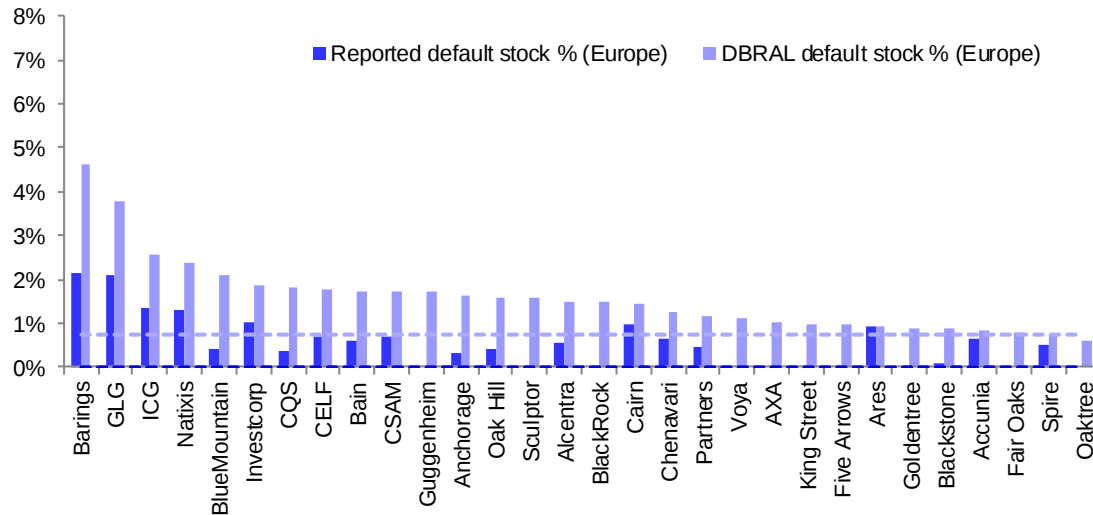
# US Manager comparison (Top 30 Large managers)



- We show the top 30 managers with a deal count greater than 10 , with the highest current DBRAL default stock and trailing 12 month default rates.
- While, across all managers DBRAL default stock ranges from as low as 0 to as high as 15%, in this large manager set, the highest is 5.5% for Bardin Hill, and the lowest among the 30 filtered managers being Palmer Square at just under 1.6%.
- Similarly, while the DBRAL trailing 12m default rate for all managers ranges from 0 to 18%, here the highest DBRAL default rate is around 9% for Zais, with the lowest among the 30 filtered managers being Oaktree at about 4%.

Source: Deutsche Bank, IntexCalc, Please consult methodology and caveats at the end of the report

# European CLO manager comparison (Top 30)



- We show the top 30 managers with the highest current DBRAL default stock and trailing 12 month default rates.
- The DBRAL default stock for all managers ranges from as low as 0% to as high as 4.6%, while the reported default stock ranges from 0 to 2.1%.
- Similarly, the DBRAL trailing 12m default rate for all managers ranges from as low as 0% to as high as 13%, while the Reported trailing 12m default rate, ranges from 0.2% to 7.2%.

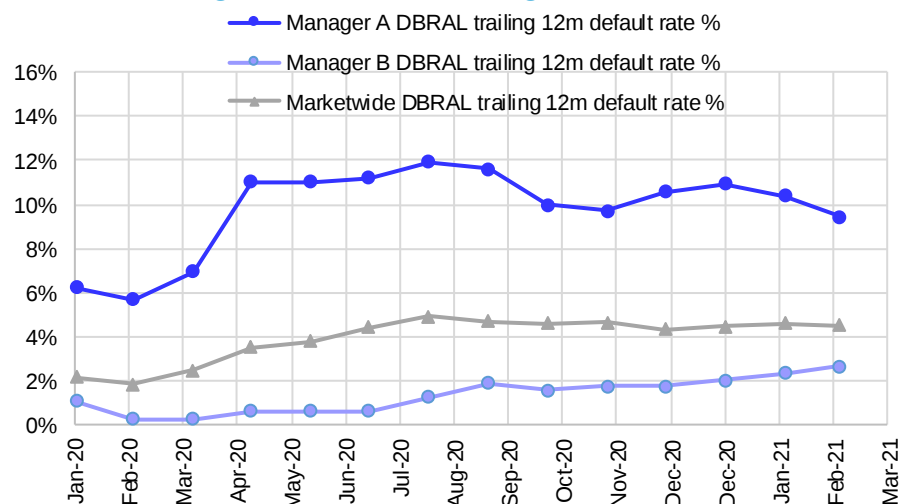
Source: Deutsche Bank, IntexCalc, Please consult methodology and caveats at the end of the report. Data is as of February 2021

# Manager differentiation - a tale of two managers



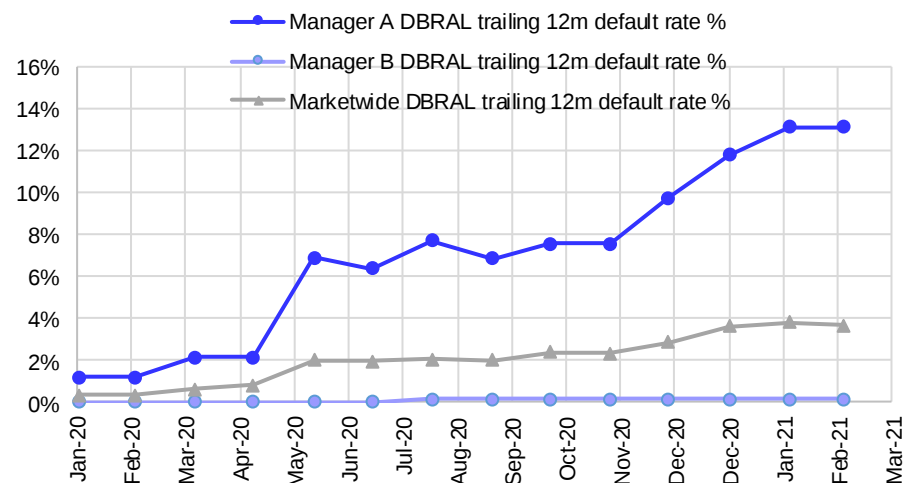
- The extent of variation in the manager default experience is perhaps best observed looking at the DBRAL trailing 12m default rate since the beginning of 2020 for two managers in each of Europe and the US.
- In each jurisdiction, two managers are selected, one a distinct underperformer, the other a distinct outperformer. The marketwide DBRAL trailing 12 m default rate is also shown over time for comparison purposes.
- In the US, looking at large managers with greater than 10 deals in the study we find that the best manager registers a 2.7% DBRAL trailing 12m default rate by amount across the universe currently, while the weakest manager comes in at 9.4% currently. These figures are against a market-wide DBRAL trailing 12m default rate of 4.5%.
- In Europe, looking at large managers with greater than 5 deals in the study we find that the best manager registered a very low 0.2% DBRAL trailing 12m default rate by amount across the universe, while the weakest manager came in at 13%. These figures are against a market-wide DBRAL trailing 12m default rate of 3.7%.

## US Manager DBRAL trailing 12m default rate



Source: Deutsche Bank, IntexCalc.

## European Manager DBRAL trailing 12m default rate

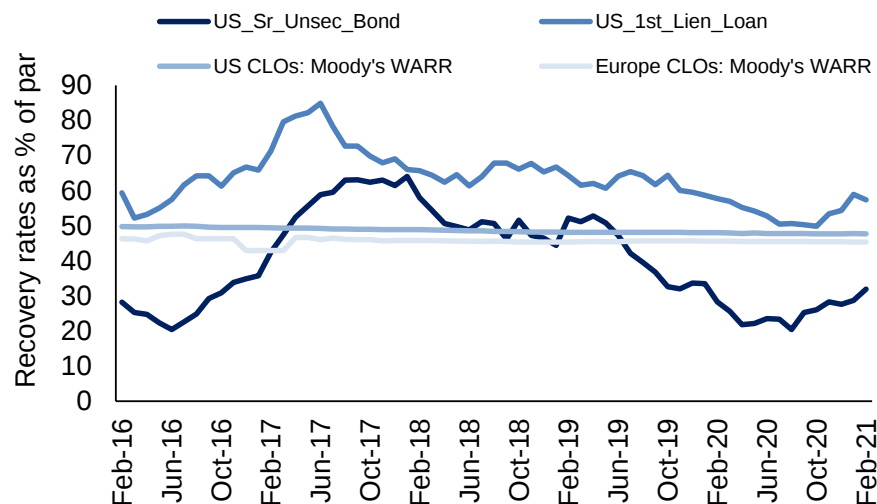


# A final word on loan recovery rates

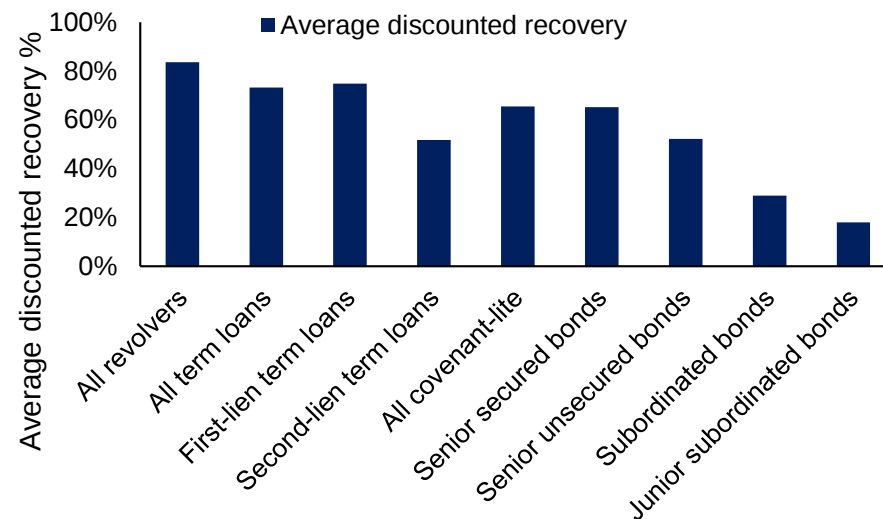


- Leveraged loans have entered into a lower recovery rate environment. The recent overwhelming demand for credit has acted to increased borrower leverage and led to looser documentation, lowering the recovery rate outlook for leveraged borrowers. Moreover, a prolongation of the restructuring timeline amid complex capital structures could lead to recovery delays as well as higher legal costs.
- Rating Agencies have summarized that the absence of financial maintenance covenants impairs ultimate recovery rates for defaulted first-lien term loans. Cov-lite loans, in particular, have realized below average recovery rates compared to their non-covenant-lite counterparts.
- Looking ahead, an all-time high leverage (~6x in 2020) will continue to mount pressure on recovery rates and will hold the recoveries below their long-term average.

## Historical WARR in CLOs, realized recoveries



## Recoveries by debt type



Source: Deutsche Bank, IntexCalc, Rating Agencies. Please consult methodology and caveats at the end of the report

# Methodology notes



- “Defaulted” means classified as default in a CLO under its definition, which may be stricter and different from a missed payment or realized loss. “Default” here may not always tie out with the market’s definition of a credit default.
- “Reported” means what is reported in the trustee report as defaulted.
- “DBRAL defaults” include the effect of adjustments made by the research team to reflect instruments classified as defaulted in any trustee report in the same month to reflect as defaulted in all deals (even if they are not reported as defaulted in those deals because of the way the CLO language for default is written).
- “Default stock” refers to the total balance of defaulted instruments in that month.
- Default figures in both stock and default rate calculations include PIK amounts also which means they are higher versus trustee reported principal balances for defaults.
- “Default rate” refers to the rate of new defaults that month, and we calculate a monthly and a trailing 12m default rate.
- We capture exposure to defaulted instruments only in the first month of default for default rate calculation purposes, and ignore subsequent changes to balances in the same defaulted exposures. In that sense, we ignore the benefit of CLOs being 'managed' vehicles, but attempt to capture risk in portfolios at the time of default.
- Default month for any instrument we use is the first month it appears in a trustee report, and does not rely on the default date indicated, if any, which could be in prior months.
- A deal is included into the calculation only after the first IPD as before then trustee reporting tends to be inconsistent across the months across the universe and we seek a uniform methodology to be consistent. This can understate manager defaults to the extent there were substantial defaults in any deal before the first IPD.
- Manager AUM balances increase or decrease depending on new deals coming in or called deals moving out of the deal set. We don't adjust for this in trailing 12m default rate calculations which uses 12m ago manager AUM for the denominator, as that is a market standard method. It will skew trailing 12m figures higher especially for managers who have seen a greater percentage increase in AUM in the last year.
- Since we take 12m ago balances for counting trailing 12m balances, for some deals, where the first IPD was after Feb 2020, they would not count towards the denominator but realized defaults in those deals would count towards the numerator. If a manager has only deals which had first IPDs after Feb 2020, then trailing 12m default rate would not be calculated or shown as zero in the excel files, but not calculated.

# Methodology notes



- At each month end date, we consider the latest loan data which is available for every deal. The analysis was run using data downloaded on 22<sup>nd</sup> March 2021 and 19<sup>th</sup> March 2021 for Europe and US respectively from Intex.
- For each such monthly set of loan data across the universe, we measure the stock of defaults, and for each defaulted instrument, we re-compute the DBRAL default exposure for all deals by classifying as default that instrument even in deals where it is not classified as default.
- Where a deal does not have loan data for a month, prior month's default data is carried over, until a new report becomes available. However we carry over only until 2 months but in such cases do not use defaults in a previous month trustee report to reclassify loans in other deals of the next month for DBRAL purposes.
- There may be timing differences which may introduce biases. For example, if a loan defaults on 20th December 2020, but it was carried in loan data as of 5th December 2020 for a deal, even in that deal it would be classified as default for that month even though the manager may have sold it by then.
- We capture a default at the earliest month in the DBRAL when any deal in the universe reports an instrument as defaulted. Consequently, in DBRAL calculations, our DBRAL defaulted figures could reflect a default of an instrument or issuer at an earlier date than when the manager classified the instrument/issuer as defaulted. We count each instrument/issuer only once for the default rate calculations and at the time of the first default in the universe for that instrument/issuer.
- Actual defaults which impose economic losses may vary from instruments that what would need to be classified as default because of deal language, where ratings of CC/Ca/C may necessitate a default classification even though no loss may yet have been imposed.
- Deals may not classify instruments as defaulted if the rating agency which rates the instrument in the default category does not rate the deal, or if the manager classifies the instrument as a current pay or restructured obligation.
- Consequently DBRAL default figures in that sense may not always reflect true defaults experienced in the deal but 'default like' exposures.
- Issuer (Corporate borrower) names have been cleaned manually on a best efforts basis so that across the universe, there is a consistent naming. Only the clean issuer name is counted towards defaulted issuer count.
- Monthly default rate figures are annualized and the data is made available in accompanying excel files.
- Sector default charts include defaults only since 2020, and use the average of Feb 2020 and Feb 2021 balances by sector for sector level default intensity.
- Default figures also include Aged Defaulted assets, which are defaulted since last 3 years or more. Hence, our default numbers are different for some deals versus trustee report (i.e. MADPK17) which exclude such obligations from par balance altogether.



# APPENDIX



- S&P identified 69 and 45 public restructuring/defaults in US and Europe respectively in the LLI and ELLI indices respectively during 2020.
- ELLI/LLI and CLO experiences are different because the datasets are different. For example, in Europe, ELLI default rate figures are lower because
  - ELLI tends to capture relatively large loans with small or illiquid loans not necessarily included.
  - ELLI captures default and restructuring which are known to them, but can miss out on private default/restructuring that are captured under a more expansive CLO definition where even a rating of CC/Ca can count as a 'default' although neither a restructuring nor a non-payment has occurred.
  - ELLI can also miss out on defaults in bond only obligors which are counted in CLOs but not under ELLI figures. ELLI also can miss out on US obligors in European CLOs.

|                                                               | Issuer Count | Amt EUR bn |                                               | Issuer Count | Amt USD bn |
|---------------------------------------------------------------|--------------|------------|-----------------------------------------------|--------------|------------|
| Defaults in the last 12m (as of end Feb 2021)                 | 42           | 3.8        | Defaults in the last 12m (as of end Feb 2021) | 94           | 23.1       |
| Public list contributing to LLI common                        | 7            | 1.0        | Public list contributing to LLI common        | 24           | 4.7        |
|                                                               | 35           | 2.8        |                                               | 70           | 18.4       |
| Number in LLI in last one year                                | 12           | 1.8        | Number in LLI in last one year                | 29           | 12.0       |
| Number not in LLI in last one year                            | 23           | 1.0        | Number not in LLI in last one year            | 41           | 6.4        |
| 23 Issuers not in LLI can be split out in multiple ways below |              |            |                                               |              |            |
| Of which US names                                             | 7            | 0.1        |                                               |              |            |
| Of which exclusively bond                                     | 10           | 0.6        |                                               |              |            |

Source: Deutsche Bank, S&P LCD

# Appendix 1

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